State of Maryland
DEPARTMENT OF NATURAL RESOURCES
MARYLAND GEOLOGICAL SURVEY
Emery T. Cleaves, Director

MINERAL RESOURCES OF QUEEN ANNE'S COUNTY, MARYLAND

by
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1995

Scale 1:62,500

1 ½ 0 1 2 3 4 Miles

1 ½ 0 1 2 3 4 5 Kilometers

Base map, Queen Anne's County Topographic Map,
published by the Maryland Geological Survey, 1986.
Contour interval 20 feet
Numbered ticks indicate the 10,000-foot Maryland State Grid of 1939
The last three digits of the grid numbers are omitted
Datum is mean sea level

SAND AND GRAVEL RESOURCES OF QUEEN ANNE'S COUNTY

Introduction

This map shows past and present mining operations and areas of potential mineral resources in Queen Anne's County. Sand and, to a lesser extent, gravel are the county's only mineral resources. Because the county is located at a considerable distance from the major population centers, most all of the material is used locally. The gravels of the Eastern Shore counties tend to be finer grained than those west of Chesapeake Bay. In most pits 90% of the material will pass 16mm.

The sand and gravel industry has grown from several farm pits in 1975 to five licensed operators at five pits in 1989 and nine operators at twelve pits in 1994. Production from Queen Anne's County in 1993 was 363,373 tons, a 42- percent increase from the 255,590 tons five years earlier.

Nearly 300 acres have been disturbed by mining since passage of the Surface Mining Act of 1975. Of that amount, roughly one-fourth has been reclaimed. The following chart gives a summary of the disturbed land at the end of 1993:

Inactive and Abandoned Acreage	*Reclaimed Acreage*	*Working Acreage*	*Total Acreage*
66	*75*	*145*	*286*

These acreage data were compiled with the help of the Minerals, Oil & Gas Division of the Water Resources Administration, Maryland Department of Natural Resources. The data were derived from surface-mining permits, field investigations, aerial photographs, and information furnished by various sand and gravel operators. Numerous small pits, some not found and some obliterated by time, are not reflected in these figures.

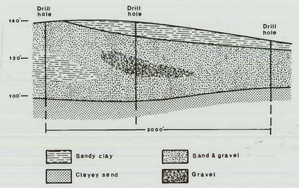
Geology

The sand and gravel deposits of Queen Anne's County are confined principally to the Pensauken Formation (Upper Miocene). This unit, depending on its location, can be in excess of 25 feet thick.

This formation is not uniform either laterally or vertically. Consequently, the quality of the material is unpredictable and its use is often determined by its location and the particular specifications of the job for which it is needed.

During the course of this investigation, 14 exposures and a number of drill hole logs were examined. Using sand and gravel thickness from these sources, an attempt was made to delineate those areas in which economic sand and gravel deposits are most likely to occur, but deposits tend to be site-specific and no continuity could be established. No attempt was made to examine quality or overburden thickness. The information on this map should be used with great caution because sand and gravel deposits commonly change in thickness and composition over short distances, and in some cases location is the determining factor as to whether a particular deposit can be used. Specific site investigations must be made before any actual reserve estimates or economic projections can be made.

The following cross section from a site west of Leonardtown, Maryland serves to illustrate both the lateral and vertical facies changes that can occur over relatively short distances.



Resource Pre-emption

Other factors not considered here influence economic viability of sand and gravel operations in certain areas. Important among these are both the proximity to and pre-emption by urban development.

SELECTED REFERENCES

Bachman, L. J. and Wilson, J. M., 1984, The Columbia aquifer of the Eastern Shore of Maryland: Maryland Geological Survey Rept. of Invest. No. 40, 144 p.

Cleaves, Emery T. et al., 1987, Quaternary geologic map of the Chesapeake Bay 4° x 6° quadrangle, United States: U.S. Geological Survey, map I-1420, scale 1:1,000,000.

Hess, Melodie, 1977, Drill hole logs and location map of surface and shallow subsurface materials, central and southern Delmarva Peninsula, Maryland, Delaware, and Virginia: U.S. Geological Survey, map MF-899, scale 1:250,000.

Miller, B. L., Stephenson, L. W. and Little, H. P., 1915, Map of Queen Anne's County showing the geological formations: Maryland Geological Survey, scale 1:62,500.

Miller, B. L., 1926, The mineral resources of Queen Anne's County in Queen Anne's County: Maryland Geological Survey, County Report Series, p. 81-91.

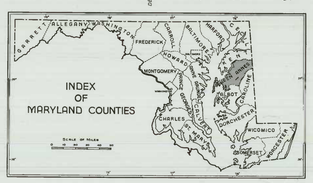
Owens, J.P. and Denny, C. S., 1979, Surface and shallow subsurface geologic studies in the emerged coastal plain of the Middle Atlantic States: U.S. Geological Survey Prof. Paper 1067-A, 28 p.

MAP SYMBOLS

- (1) Active sand and gravel, sand, or borrow pit (Number refers to operator; see text.)
- × Abandoned sand and gravel, sand or borrow pit
- Areas of potential sand or sand and gravel

ACTIVE OPERATIONS
(numbers are keyed to locations on map)

1.	R. B. Baker & Sons, Inc.	Sand & gravel
2.	Phillip T. Callahan, Jr.	Sand & gravel
3.	David A. Bramble, Inc.	Sand & gravel
4.	Kevin Quinn	Bankrun sand
5.	John E. George, Jr.	Bankrun sand
6.	Murdock Florist, Inc.	Bankrun sand
7.	Fair Hill Farms, Inc.	Bankrun sand
8.	R. B. Baker & Sons, Inc.	Bankrun sand
9.	Pinder's Reserve, Inc.	Bankrun sand
10.	Robert H. Newberry	Sand & gravel
11.	David A. Bramble, Inc.	Bankrun sand
12.	David A. Bramble, Inc.	Bankrun sand



Copies of this map may be purchased from the Maryland Geological Survey 2300 St. Paul St., Baltimore, Maryland 21218

County Boundary Line
13 Apr. 76, Md. Court of Appeals
D.N.R. vs Frances 277 Md. 422 (75)